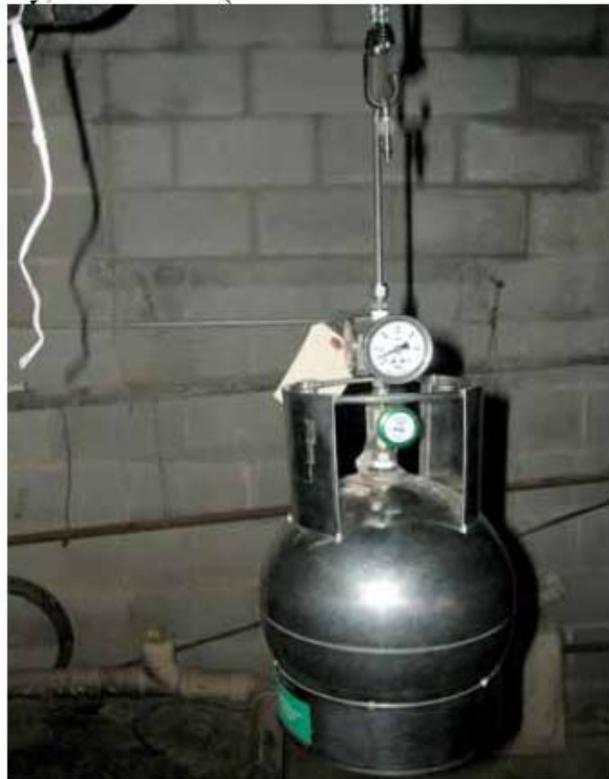


SAMPLING EQUIPMENT, MITIGATION SYSTEMS, AND CHEMICAL CHECKLIST

The following pages contain photographs of Summa canister for collecting indoor air samples, and photoionization detectors (PIDs), as well as photos and schematics for residential subslab depressurization (SSD) systems. SSDs are installed to prevent vapor intrusion.



Examples of different models of Summa canisters, which are about the size of a basketball.

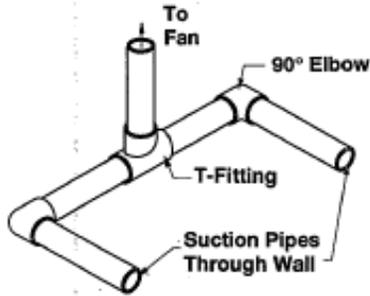


Examples of two types of photo-ionization detectors (PIDs) for field measurement of organic chemical vapors.



Photos of residential subslab depressurization (SSD) systems. Vapors are extracted through the use of a small fan, then harmlessly vented to the outdoors where they quickly disperse.

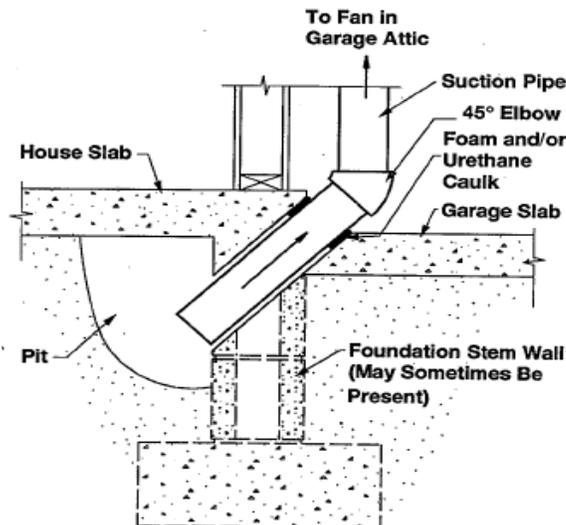
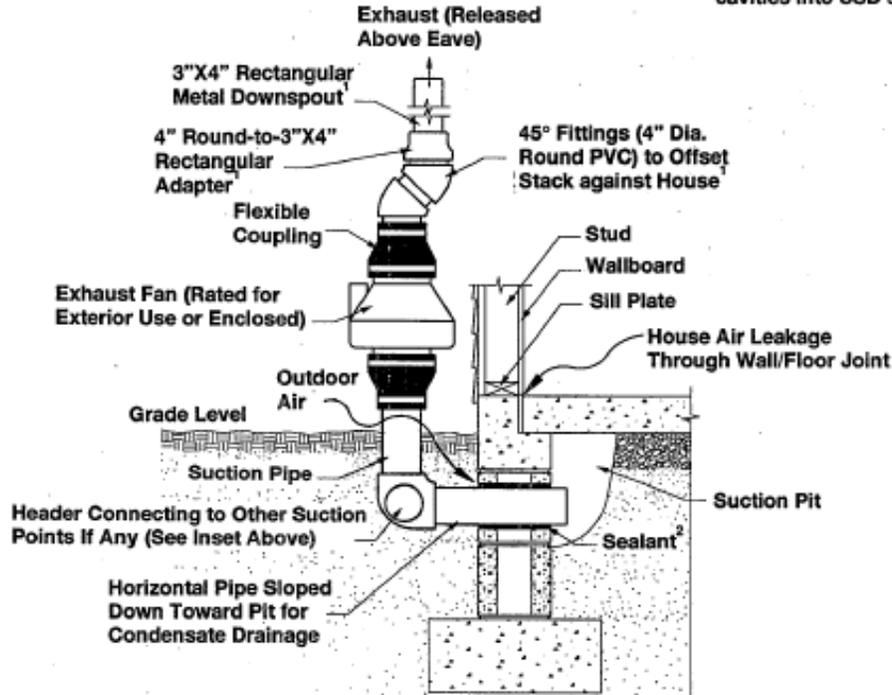
Preventing soil gas entry is the focus of SSD. It involves sealing the foundation and depressurizing the soil. Sealing cracks and holes with epoxies and caulks, and sealing the crawl space from the rest of the house are all methods with some application. SSD can reduce vapor levels by as much as 99%. Suction puts the soil at a lower pressure than the inside of the home, preventing inward migration of soil gas. Installing an SSD system involves sinking ventilation pipes below the foundation and continuously pumping out air by running a small fan. Subslab depressurization (SSD) systems were developed to mitigate intrusion of naturally occurring radon gas, but are equally effective for mitigating the intrusion of solvent vapors.



One possible configuration for a multi-pipe system

Notes:

1. The exterior downspout exhaust stack illustrated here is one of several possible stack configurations, as discussed later.
2. Sealing pipe penetration through wall is important to reduce leakage of outdoor air and air from block cavities into SSD system.



Chemical Information

Chemical Name: **Tetrachloroethylene**

CAS Registry Number: 000127-18-4

Synonyms: Tetrachloroethylene; 1,1,2,2-Tetrachloroethylene, Tetrachloroethene, Ethylene tetrachloride, Perchloroethylene, Perchloroethylene, PCE

Products that contain PCE

Brand	Category	Form	Percent
Lectra Motive Auto Care	Auto products	aerosol	70-100
Trouble Free Rust Buster	Auto products	aerosol	
Gumout Professional Non Flammable Brake Parts Cleaner	Auto products	aerosol	50-90
Champion Carburetor Cleaner	Auto products	aerosol	15 - 20
Champion Sprayon Degreasing Solvent	Auto products	aerosol	20 - 25
ProFree Anti Seize Lubricant	Auto products	aerosol	45 - 50
ProsALL Prosolv	Auto products	aerosol	20-25
Brakleen Brake Parts Cleaner-01/26/1999	Auto products	liquid	>90
Lectra Motive Auto Care-03/28/2002	Auto products	aerosol	>90
Brakleen Brake Parts Cleaner-Bulk	Auto products	liquid	>90
Brakleen Brake Parts Cleaner	Auto products	liquid	65-94
Liquid Wrench Supr Lubricant with Teflon	Auto products	aerosol	65-80
Champion Sprayon Brake Parts Cleaner	Auto products	aerosol	<1
ProsALL Propen Non flammable Penetrating Oil	Auto products	aerosol	60 - 65
Snap Wire Drier	Auto products	aerosol	45-55
Espree Tire Shine	Auto products	aerosol	30
Brakleen Brake Parts Cleaner-03/28/2002	Auto products	liquid	>90
Aleenes Platinum Bond Patio & Garden	Adhesive Hobby/Craft	liquid	70
ARAMCO Art and Crafts Goop, FP Goop	Hobby/Craft	liquid	
Aleenes Platinum Bond 7800	Adhesive Hobby/Craft	liquid	70
Aleenes Platinum Bond Super Fabric Textile	Adhesive Hobby/Craft	liquid	70
Hagerty Silversmiths Spray Polish	Home inside	aerosol	30.5
Champion Spot It Gone	Home inside	aerosol	20 - 25
Plumbers Goop Adhesive and Sealant	Home maintenance	paste	67.5
Champion Anti Seize	Home maintenance	aerosol	45 - 50
Drycleaned clothes or furnishings	Personal/home	off-gassing	

Note: A study of nine homes into which 10 or fewer freshly dry-cleaned garments were introduced showed an increase in tetrachloroethylene levels in the air of seven homes (Thomas et al. 1991). The increases ranged from 2 to 30 times the levels before the introduction of the garments, and the magnitude of the increase was highly correlated with the number of garments divided by the house volume.

Although the indoor-air concentration of PCE vapors from freshly dry-cleaned items is temporary, it is recommended that freshly dry-cleaned items be placed in a garage or outside area for several days before bringing these items inside the living space of a home.

Handout Page for Residents: Other Potential Sources of Chemical Contaminants

(These sources include products that may contain other volatile organic compounds, which may interfere with the laboratory analysis for PCE in the indoor air sample)

Which of these items are present in the building? (Check all that apply)

Potential VOC Source	Location of Source	Removed 48 hours prior to sampling? (Yes/No/NA)
Paints or paint thinners		
Gas-powered equipment		
Gasoline storage cans		
Cleaning solvents		
Air fresheners		
Oven cleaners		
Carpet/upholstery cleaners (spot cleaners)		
Hairspray		
Nail polish/polish remover		
Bathroom cleaner		
Appliance cleaner		
Furniture/floor polish		
Moth balls		
Fuel tank		
Wood stove		
Fireplace		
Perfume/colognes		
Hobby supplies (e.g.,solvents, paints, lacquers,glues, photo chemicals)		
Scented trees, wreaths, potpourri, etc.		
Drycleaned clothes or furnishings		
Other		

ATSDR 1997. Toxicological Profile for Tetrachloroethylene. U.S. Department of Health and Human Services, Public Health Service Agency for Toxic Substances and Disease Registry. September.